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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/347,690	07/02/1999	MANPREET S. KHAIRA	884.107US1	4194

7590

12/24/2002

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EXAMINER

MAKHDOOM, SAMARINA

ART UNIT

PAPER NUMBER

2123

DATE MAILED: 12/24/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/347,690

Applicant(s)

KHAIRA ET AL.

Examiner

Samarina Makhdoom

Art Unit

2123

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 03 December 2002.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☐ Claim(s) \_\_\_\_\_ is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-28 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02 July 1999 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Drawings***

1. Examiner maintains objections to drawings. Figures 1, 3, and 9 should be labeled as "Prior Art." See the Casas et al. reference in the applicant's information disclosure statement.

### ***Response to Arguments***

2. Examiner has reviewed the applicant's arguments under 35 U.S.C. 112, 2<sup>nd</sup> paragraph. The rejection under 35 U.S.C. 112, 2<sup>nd</sup> paragraph is now withdrawn.
3. Examiner acknowledges the receipt of Affidavits under 37 C.F.R. 1.131 for Jeremy Casas, Honghua Yang, and Erik Seligmann, received on 12/3/2002. Based on these Affidavits, rejection under 35 U.S.C. 102(a) is now withdrawn. The reference included in the affidavits is not a proper Information Disclosure Statement. Therefore Khaira et al., "Simulation of Large Circuits on Intel Services," is not considered in the examination of this application.
4. Affidavits under 37 C.F.R. 1.131 cannot traverse the Rejection under 35 U.S.C. 102(b) as stated on Page 3, 2<sup>nd</sup> paragraph of the response to the office action received on 12/3/2002. Since no specific arguments were presented in regards to the 102(b) rejection and In re Epstein, the 102(b) rejection is maintained. See Cases et al., "Logic Verification of Very Large Circuits Using Shark," Twelfth International Proceeding on VLSI Design, Jan 7-10, 1999, Introduction, 3<sup>rd</sup> paragraph that states "Shark achieves high performance simulations on very large circuits through a combination of novel circuit partitioning techniques and high speed parallel circuit

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simulation (initially presented in [1])." Reference [1] is Khaira et al., "Logic Verification Using Shark," presented in July 1997. In re Epstein (CA FC) 31 USPQ2d 1817 (8/17/1994).

Applicants are encourage to submit Khaira et al., "Logic Verification Using Shark," if they intend to argue the 102(b) Rejection at some later point in time.

***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. **Claims 1-28 are rejected under 35 U.S.C. 102(b) as being anticipated by Casas, et al., "Logic Verification of Very Large Circuits Using Shark", Twelfth International Proceeding on VLSI Design, Jan 7-10, 1999.**

As per Claim 1, Casas et al. disclosed a method of decomposing a circuit into a plurality of extended latch boundary components and partitioning the components, (See Page 311, Top of Left Column).

As per Claim 2, Casas et al. disclose decomposing the extended latch boundary components, (See Page 312, Bottom of Left Column).

As per Claims 3-10, Casas et al. disclose using a constructive bin-packing heuristic, merging the extended latch boundary components, and partitioning by hierarchical cells, and achieving load balancing (See Page 311, Top of Right Column).

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As per Claims 11-16, Casas et al. disclose partitioning the circuit to achieve maximum speed up, minimize logic replication and cut size. (See Page 311, Section 3.1).

As per Claim 17, Casas et al. disclose the latch boundary component path selected from a group of latches and primary outputs, (See Page 312, Section 3.2)

As per Claims 18-20, Casas et al. disclose the method of grafting the expanded circuit structure (See page 312, Section 3.5)

As per Claims 21-23, Casas et al. disclose preparing, adjusting and executing simulations. (See Page 313, Section 3.4)

As per Claims 24-28, Casas et al. disclose a computer system with a processor unit, dicing unit and simulation unit. (See Page 310, Figure 1 and related text).

### ***Conclusion***

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 C.F.R. § 1.136(a).

A SHORTENED STATUTORY PERIOD FOR RESPONSE TO THIS FINAL ACTION IS SET TO EXPIRE THREE MONTHS FROM THE DATE OF THIS ACTION. IN THE EVENT A FIRST RESPONSE IS FILED WITHIN TWO MONTHS OF THE MAILING DATE OF THIS FINAL ACTION AND THE ADVISORY ACTION IS NOT MAILED UNTIL AFTER THE END OF THE THREE-MONTH SHORTENED STATUTORY PERIOD, THEN THE SHORTENED STATUTORY PERIOD WILL EXPIRE ON THE DATE THE ADVISORY ACTION IS MAILED, AND ANY EXTENSION FEE PURSUANT TO 37 C.F.R. § 1.136(a) WILL BE CALCULATED FROM THE MAILING DATE OF THE ADVISORY

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ACTION. IN NO EVENT WILL THE STATUTORY PERIOD FOR RESPONSE EXPIRE LATER THAN SIX MONTHS FROM THE DATE OF THIS FINAL ACTION.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Samarina Makhdoom whose telephone number is (703) 305-7209. The examiner can normally be reached on Full Time on Tuesday, Thursday, Friday, and Sunday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kevin J. Teska can be reached on 703-305-9704. The fax phone numbers for the organization where this application or proceeding is assigned are 703-305-0040 for regular communications and 703-305-0040 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-3900.

SM  
December 20, 2002

  
HUGH JONES Ph.D.  
PRIMARY PATENT EXAMINER  
TECHNOLOGY CENTER 2100